Standards for Address-Enabled Road Centerlines

Version 1.0

Adopted
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By

Geographic Information Advisory Council's
Street Centerline & Addressing Subcommittee

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EXECUTIVE SUMMARY

The purpose of this Standard is to provide guidance to those government agencies using the Kentucky Transportation Cabinet (KYTC) GPS Road Centerlines as the basis for their Geographic Information Systems (GIS) Transportation Layer. This layer contains the minimum data elements necessary for the creation of an address-enabled road centerline file. A statewide addressable centerline provides the GIS community a needed tool to spatially enable their traditional addressed-based data. It assists in the creation of an overall decision support system and allows government and private sector users the ability to answer a variety of the questions that involve the distribution of people, services and resources.

The Geographic Information Advisory Council envisions the data to be collected from various local and state government entities. It will be integrated, and distributed as a single statewide road centerline available to all users within the Commonwealth. This address-enabled road centerline layer has commonly been referred to as an “intelligent" road centerline. Either form of reference will be used interchangeably in this standard.

BACKGROUND

The GIS community has recognized a common need for accurate “intelligent” road centerlines that contain basic address information. Local, Regional, State, and Federal Agencies in addition to private sector entities use these centerlines for emergency dispatch, community emergency planning, agency studies, medical research, bus route planning and a variety of other applications. Also with diminishing resources, a cost-effective method must be developed to encourage data sharing and that satisfies the many users' accuracy needs.

Since at least 1999 the Kentucky Office of Geographic Information (KYOGI) recognized the GIS community's common need for addressed road centerlines. Several meetings were held and scenarios were considered, but developing a statewide addressing standard and methods were determined to be very complicated and needed more community input. In 2000 the Geographic Information Advisory Council (GIAC) formed a subcommittee to develop a proposed methodology and data standard to guide in the building of a statewide addressed road centerline data layer. The layer was to be derived from the Kentucky Transportation Cabinet's GPS Road Centerline Program layers merged with locally collected and maintained address information. The result of the GIAC request is the Street Centerline & Addressing Subcommittee. Two charges were given to the subcommittee during its creation.

Street Centerline and Addressing Subcommittee Charges

The Street Centerline and Addressing Subcommittee was charged to work with the GIAC membership, the Office of the CIO, and KYOGI, and the GIS technical community in Kentucky and nationally, to…

I. define the issues around the need for a methodology to create and maintain a digital geospatial road centerline file for the Commonwealth that allows for timely and reasonably accurate arrival at a street address for emergency dispatch, delivery, and routing of services.

II. research and make recommendations to the GIAC for approval of an addressing standard for the digital geospatial road centerline file for the Commonwealth.

The appendices of this document and supplemental information, including the pilot project (http://giac.state.ky.us/giac_standards_centerline.htm) performed on behalf of GIAC through OGI in support of the subcommittee's efforts, satisfies the first charge. This remainder of document defining the standard satisfies the second charge.

An overview of methods used in the pilot study for developing address-enabled centerlines is presented in Appendix I. GIAC, OGI and the Addressing Subcommittee wanted to provide data developers a tested method to achieve the standard. For more

details go to the Pilot study report on the GIAC website. There are many ways to achieve the standard. Alternative methods for developing address-enabled centerlines are acceptable *as long as they meet the required structure and accuracy levels* defined in this and related documents.

GOT Standards

This effort to build a statewide address-enabled road centerline standard, database, and associative metadata supports the Governor's Office of Technology's (GOT) effort to build enterprise-based information systems. The resulting centerline along with this documentation and the information distribution method follows GOT's guiding principles found within the Strategic Information Technology Plan:

1. Support the business objectives of Commonwealth Government;
2. Conduct Commonwealth business electronically;
3. Treat information as a strategic resource;
4. View technology investments from an enterprise perspective; and,
5. Ensure electronic access to information and services while assuring privacy. (See http://www.state.ky.us/kirm/edspol.htm)

CONSTRAINTS

Access Constraints

This data set is to be publicly accessible via the Office of Geographic Information's web site: http://www.state.ky.us/agencies/finance/depts/ogis/gisdept.htm and the Kentucky Geography Network (http://kygeonet.state.ky.us/).

Use Constraints

This data is intended for general use. No restrictions are set upon it. See disclaimer and accuracy statements below for guidance on use.

DISCLAIMER

While all attempts are made to insure the correctness and suitability of information under our control and to correct any errors brought to our attention, no representation or guarantee can be made as to the correctness or suitability of that information or any linked information presented, referenced, or implied. All critical information should be independently verified. Any questions should be directed to the administrator/s of this or any other specific datasets.

PRODUCT DESCRIPTION

Future Product

KYTC will merge with its existing road centerline GIS files the integrated address attributes to create a statewide "intelligent" road centerline for all publicly accessible roads in Kentucky.

Geographic Extent

The statewide road centerline map layers have a geographic extent that spans the entire state. The state's bounding coordinates in decimal degrees are:

North: 39.147732

West: -89.571205 East: -81.964790

South: 36.497059

All Kentucky roads will fall within this box. It should be noted that adjoining states will share some of this same coordinate space within these parameters as well.

Coordinates & Datum

The data provided for distribution uses the standard DD projection.

Map Projection: Geographic (Latitude/Longitude)
Map Units: Degrees Decimal (DD)
Z-units: NO
Datum: NAD83
Spheroid: GRS1980
X-shift: 0.0000000000
Y-shift: 0.0000000000

Please note that the decimal is to be carried out at least five (5) decimal places.

Currency of Data & Update Cycles

The address-enabled centerline will have a multi-tiered rolling update plan. The update cycle of a particular county depends on its level of growth and other factors yet to be fully defined. Generally speaking, counties will be updated on a one to three year cycle with the higer growth rate counties being updated more frequently than the others.. When a county is updated, it will be folded into the regional and statewide address models. A new version of the statewide address enabled centerline will be published on a monthly basis, which will include any counties updated that month. Those updated county will not be re-integrated for one to three years, depending on its defined cycle. More details are described in Appendix II.

While there is a strong desire on the part of many agencies for a shorter "refresh cycle" of this information, the current staff and budget constraints in addition to the ever-increasing demands on existing staff time preclude update cycles emulating anything

near “real-time.” As the integration process moves forward and improved methods are discovered or additional monies are allocated, then the update cycles can be shortened.

"INTELLIGENT" ROAD CENTERLINE ATTRIBUTE STRUCTURE

The "Intelligent" road centerline has two subsets of attributes. The first set is the KYTC road centerline attributes. These are the spatial components and specific information about the road itself. KYTC and its subcontractors maintain them. The second subset is the address fields that aid in geocoding and dispatch. They are maintained by local entities and will be integrated with the centerlines annually into a statewide address enabled centerline.

KYTC Road Centerline Attributes

The KYTC Road centerline attributes are thoroughly described in the Standards for KYTC Road Centerlines (http://giac.state.ky.us/giac_standards_trans.htm). The referenced standard contains details about the data structure and ranges of appropriate codes for each field in addition to general descriptions of what the fields contain. Please use it when verifying KYTC-based attributes.

Road Centerline Address Attributes

The addressing component of the "Intelligent" road centerline follows much of the National Emergency Number Association's (NENA) recommended standard. Table 1 provides the GIAC field name, and corresponding NENA definitions including field parameters and descriptions. It is important that address data developers adopt consistent data types and field sizes to expedite data integration.

Table 1: Comparison of GIAC Road Centerline Address Standard Field Definitions & NENA_02-010 Protocols

GIAC NAME		FIELD ABBREV	NENA NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
**		LLO	Left Add Low	10	N	Lowest address on left side of street in ascending order
**		LHI	Left Add High	10	N	Highest address on left side of street in ascending order
**		RLO	Right Add Low	10	N	Lowest address on right side of street in ascending order
**		RHI	Right Add High	10	N	Highest address on right side of street in ascending order
Pre_dir		PRD	Prefix Directional	2	AN	Leading street direction prefix. Valid Entries: N, S, E, W, NE, NW, SE, SW
Road_Name		STN	Street Name	60	AN	Valid service address of the Calling Party Number
Road_type		STS	Street Suffix	4	AN	Valid Street abbreviation, as defined by the US Postal Service Publication 28. (e.g. AVE)
Post_dir		POD	Post Directional	2	AN	Trailing street direction suffix. Valid Entries: N, S, E, W, NE, NW, SE, SW
*		ROC	Road Class	3	AN	Road Class as defined by the USGS National Mapping Product Standard for 1:24,000-scale and 1:25,000- scale Quadrangle Map Products. [http://rockyweb.cr.usgs.gov/nmpstds/acrodocs/dlgqmap/3dqm0401.pdf p.3-81]
One_Way		ONW	One-way	1	A	(Population is OPTIONAL)One way road classification. Blank = Rd. not one-way; X = Flow in opposite direction of arc;. Y = Flow In direction of arc
*		MCL	MSAG Community Name Left	35	A	Valid service community name as identified by the MSAG on the left side of the street
*		MCR	MSAG Community Name Right	35	A	Valid service community name as identified by the MSAG on the right side of the street
Local_ID		SID	Segment ID	8	N	Unique Road Segment ID number (built by county number + 5digit local arc-segment number [e.g. 12012345, 00100145)
*		COL	County ID Left	5	AN	County Identification code (usually the FIPS code) on the left side of the street.
*		COR	County ID Right	5	AN	County Identification code (usually the FIPS code) on the right side of the street.
Update_Src		SOD	Source of Data	5	A	Agency that last updated the record
Address_Date		DLU	Date Updated	10	N	Date of last update Format: CCYY-MM-DD

* Note that grayed out fields will not be used in the GIAC "Intelligent" centerline layer. One_Way is an *optionally populated* field.

****** Note that these address number fields have *similar* but not exact correlating fields in GIAC standard described in Table 2.

Not all data needs to be maintained and edited at the local level. This standard advocates a hierarchical maintenance plan (see Appendices I & II for supplemental information). Table 2 shows the fields that the local integrators need to create, populate and maintain. Table 3 shows the fields that will be added during the regional integration. Tables 4 and 5 display associated data that will be pulled in to efficiently create the final structure for the "public" distribution as shown in Table 6. Please note that some fields may be maintained at several levels.

Table 2: GIAC Road Centerline Address Standard Fields to be Maintained by Local Integrators

GIAC NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
LFROM	10	N	Address number on left side of street from arc origin
LTO	10	N	Address number on left side of street to arc end point
RFROM	10	N	Address number on right side of street from arc origin
RTO	10	N	Address number on right side of street to arc end point
PRE_DIR	2	AN	Leading street direction prefix. Valid Entries: N, S, E, W, NE, NW, SE, SW
STR_NAME	60	AN	Legal Name of Street/Road
STREET_TYP	4	AN	Valid Street abbreviation, as defined by the US Postal Service Publication 28. (e.g. AVE)
STREET_DIR	2	AN	Trailing street direction suffix. Valid Entries: N, S, E, W, NE, NW, SE, SW
One_Way	1	A	(Population is OPTIONAL) One way road classification. Blank = Rd. not one-way; X = Flow in opposite direction of arc;. Y = Flow In direction of arc
Local_ID	8	N	Unique Road Segment ID number (built by county number + 5digit local arc-segment number [e.g. 12012345, 00100145)
Update_Src	5	A	Agency that last updated the record
Address_Date	10	N	Date of last update Format: CCYY-MM-DD
Zip_Left	5	N	Five Digit Zip Code associated with left side of road
Zip_Right	5	N	Five Digit Zip Code associated with right side of road

Please note that if a user does need the community and county names, these can be derived by merging other lookup tables (using the zip fields as foreign keys for community and spatially joining the county polygon coverages onto the centerline to derive the county ID).

Table 3: GIAC Road Centerline Address Standard Fields to be Added/Maintained by Regional Integrators

GIAC NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
Local_ID	8	N	Unique Road Segment ID number (built by county number + 5digit local arc-segment number [e.g. 12012345, 00100145) MUST BE VALIDATED AS A UNIQU ID.
Update_Src	5	A	Agency that last updated the record
Address_Date	10	N	Date of last update Format: CCYY-MM-DD
Cnty_Num	3	N	Kentucky County Number as described by GOT (See http://www.state.ky.us/kirm/cdd_98.pdf)
CntyFIPS	3	AN	Federal Information Processing Standard (FIPS) Code for each county in Kentucky

Note that this reference table can be rapidly created using the existing data from merging the data from Table 2 with the attribute information stored on the KYTC Road Centerline. Maintenance of this table should be a simple automated process.

Table 4: Supplemental County Level Information Maintained by the Regional Integrators

FIELD NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
Cnty_Num	3	N	Kentucky State Government designated County Number. GOT (See http://www.state.ky.us/kirm/cdd_98.pdf)
CntyFIPS	3	AN	Federal Information Processing Standard (FIPS) Code for each county in Kentucky
CntyName	20	A	Name of the County
OneWayCnty		B	True/False: Is the county maintaining One_Way Road Information

Table 5: Supplemental Record Level Information

FIELD NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
Local_ID	8	N	Unique Road Segment ID number (built by county number + 5digit local arc-segment number [e.g. 12012345, 00100145) *This field is a Foreign Key and should NOT be edited in this table.*
Update_Src	5	AN	Agency that provided the comment
Update_Dat	10	N	Date of Comment Format: CCYY-MM-DD
Comment	254	AN	(Population is OPTIONAL) This field provides a place for data developers/integrators to note anomalies that cannot be addressed at the time of discovery. It allows for future searching, pattern recognition and correction.

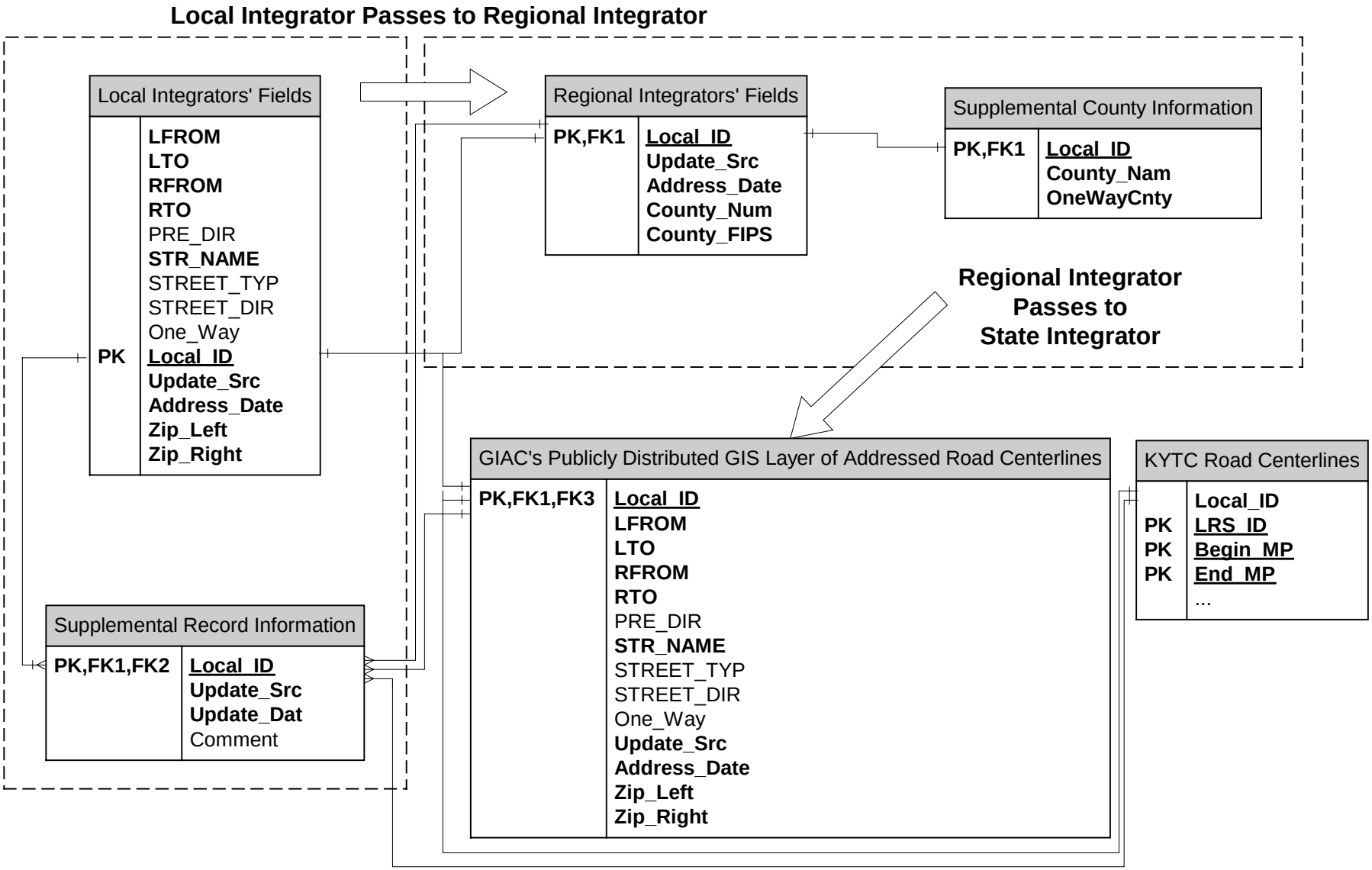
Note: This table has a one-to-many relationship with the other tables that include the Local_ID field. This table is a means of capturing comments made during the update procedure. The Local_ID field is not editable.

Table 6: GIAC Road Centerline Address Standard Fields of Publicly Distributed GIS Layer

GIAC NAME	BYTE SIZE	DATA TYPE	DATA DESCRIPTION
LFROM	10	N	Address number on left side of street from arc origin
LTO	10	N	Address number on left side of street to arc end point
RFROM	10	N	Address number on right side of street from arc origin
RTO	10	N	Address number on right side of street to arc end point
PRE_DIR	2	AN	Leading street direction prefix. Valid Entries: N, S, E, W, NE, NW, SE, SW
STR_NAME	60	AN	Legal Name of Street/Road
STREET_TYP	4	AN	Valid Street abbreviation, as defined by the US Postal Service Publication 28. (e.g. AVE)
STREET_DIR	2	AN	Trailing street direction suffix. Valid Entries: N, S, E, W, NE, NW, SE, SW
One_Way	1	A	(Population is OPTIONAL) One way road classification. Blank = Rd. not one-way; X = Flow in opposite direction of arc;. Y = Flow In direction of arc
Local_ID	8	N	Unique Road Segment ID number (built by county number + 5digit local arc-segment number [e.g. 12012345, 00100145)
Update_Src	5	A	Agency that last updated the record
Address_Date	10	N	Date of last update Format: CCYY-MM-DD
ZIP_LEFT	5	N	Five Digit Zip Code associated with left side of road
ZIP_RIGHT	5	N	Five Digit Zip Code associated with right side of road
Cnty_Num	3	N	Kentucky County Number as described by GOT (See http://www.state.ky.us/kirm/cdd_98.pdf)
CntyFIPS	3	AN	Federal Information Processing Standard (FIPS) Code for each county in Kentucky

Note: One_Way is an *optionally populated* field

Figure 1 : Table Relationships of GIAC Road Centerline Address Standard

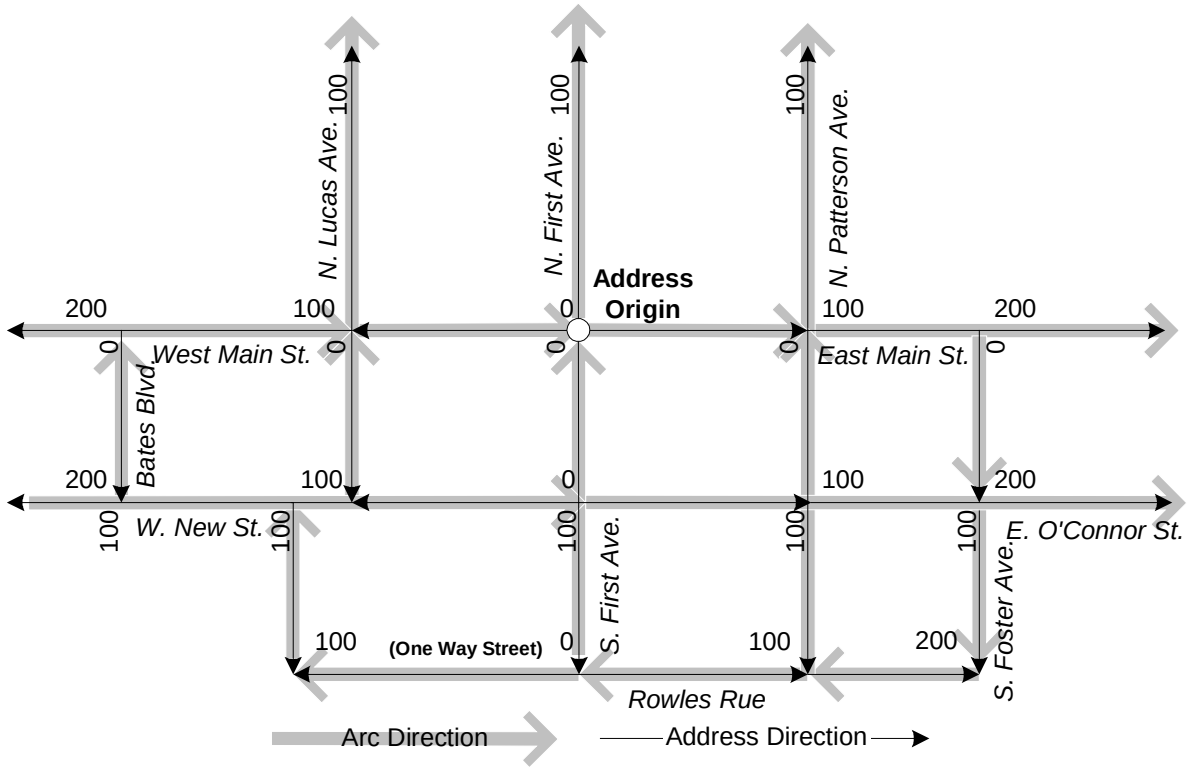


[Bold] indicates required fields; PK = Primary Key; FK = Foreign Key; U= Unique in Table

Arc Directionality and Address Range Attribution

The data integrators and users must be aware that common practices of road centerline arc directionality (cardinality rule) will often conflict with the directionality of address ranges along the same road segment (see Figure 2). The integrator using this standard should use or develop tools necessary to assure consistent and accurate attribution of the underlying road network so geocoding will occur properly.

Figure 2: Example of Conflict Between Arc Directionality and Address Range



Street/Road Naming

The official street name recorded in the address-enabled road centerline should conform to KRS 177.074 "*Naming of state road or bridge*" for state maintained facilities and KRS 179.330 "*Names of county roads -- How changed and established -- Erection of signs*" and any other relevant laws defining the naming or changing of names for the road network of Kentucky.

Known Design Limitations

One-Way Roads

This Standard defines the ONE_WAY field as optional. There was considerable discussion regarding the need for this field and also the challenge in populating and then maintaining it. As a compromise, the field was kept as an *optional* field. The local integrator of the data will be responsible for determining whether the county under consideration will populate the field. If the locals choose to, then they will attribute and maintain the records accordingly and the local integrator will notify the regional and state integrators as data is passed along the integration process.

Routing

As a result of the "optional " status, the information necessary for developing statewide routing applications will not be available in the current version of this standard, therefore statewide routing applications will not integrate local one-way criteria and this will result in some inaccuracies.

Additional Information

Many local entities have developed rich data sets that include information outside the focus of this standard. This standard is designed to support statewide address-enabled road centerlines. More detailed inquiries should be directed to these local entities to determine data availability.

ACCURACY

Spatial Accuracy Statement

The spatial accuracy for the address-enabled road centerlines must comply with the previously published GIAC road centerline standard. See Standards for KYTC Road Centerlines Accuracy Statement (http://giac.state.ky.us/giac_standards_trans.htm).

Attribute Accuracy Statements

Attributes are broken into two separate groups: the KYTC road centerlines and the locally maintained address information. Since these attributes are maintained by separate entities and have independent processes for populating and evaluating them, they will be discussed separately.

KYTC Road Centerline Attribute Accuracy

For descriptions of the KYTC road centerline attributes, see Standards for KYTC Road Centerlines (http://giac.state.ky.us/giac_standards_trans.htm). There is not a defined level of accuracy/completeness for the road centerline attributes. However internal KYTC QA/QC processes are in place to validate attributes. Any errors or omissions

should be reported to the KYTC contact person listed in the Contact Information Section of this document.

Address Enabling Attribute Accuracy

For Address fields, the local data owner must comply with the Commercial Mobile Radio Services Emergency Telecommunications Board (CMRS) for adherence to regulations. The CMRS Board is currently drafting accuracy standards for implementation that will assure a highly accurate address database that can be integrated with other GIS data. The preliminary CMRS draft requirements state that by January 01, 2006 98% of all addresses geocoded must locate:

(1) on the proper street,
(2) between the proper cross-streets,

There will be interim milestones to meet prior to the 2006 date to help encourage progress in achieving this accuracy goal. For further details see the CMRS Board website: http://cmrsboard.state.ky.us/

The emergency dispatch requirement for high geocoding success demands complete and accurate address field attribution.

DELIVERED FILE FORMATS

Data will be delivered to OGI for FTP distribution. Additionally, this "Intelligent" road centerline layer will be shared via KYGeoNet.

File formats on the OGI server for public distribution will be in ESRI E00 and shapefile formats. See the “Coordinates & Datum” section above for projection information.

The address-enabled centerline files will be delivered in a single statewide map layer that combines both local and state-maintained roads. It will be named KYADDRDS.

County-level breakdowns of this will still be provided as well. The county level files are named with a county abbreviation followed by a suffix to mark them as address enabled. The files are assigned by the first 4 letters of each county name with the following exceptions: Lee (LEE), Greenup (GRNP), McCracken (MCRA), and McCreary (MCRE). The suffix “_ard” designates them as "addressed roads." Examples are “adai_ard” for Adair County and “fult_ard” for Fulton County address-enabled roads.

NOTE: For shapefiles, all three file types (.shp, .shx, .dbf) must be present for a shapefile to work properly. Other indexing files may also be included.

CONTACT INFORMATION

For questions regarding the spatial component of this standard please contact:
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For questions regarding the address component of this standard please contact:
John J. Patterson
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E-mail: John.Patterson@mail.state.ky.us

APPENDICES

APPENDIX I: Overview of Development of Address Ranges

This development process occurs county by county after the roads have been updated and the E911 coordinator (or other valid local address database owner) has thoroughly cleaned their MSAG/local address database (hereafter LAD). This is borrowed from the Kentucky Road Centerline Pilot Project Final Report, submitted by Pennyrile ADD and MapSync Company, April 30, 2002 with some minor editing and formatting changes. See Workflow diagram below (Figure 3).

Work by KYTC

1. KYTC road centerline update mapping is completed for county (either by KYTC's GPS effort or validly collected local network integrated into KYTC's road network).
2. KYTC completes its review and creates valid State segment Ids (LRS-ID, Begin_MP & End_MP).
3. KYTC makes available updated road centerlines for target county

   PRODUCT: KYTC updated road centerlines for target county

Work by Local 911 Coordinator or Address Database Owner

1. Create/Verify MSAG or LAD is structured properly for county address data
2. Verify address data is correctly populated for county
3. Pass address data to Local Integrator for county

Work by Local Integrator

1. Acquire KYTC updated road centerlines for county
2. Verify/Populate the local segment ID field (Local_ID) in LAD and road centerline
3. Add MSAG/LAD road name fields to the KYTC road centerlines
4. Populate road name fields with MSAG/LAD names

   PRODUCT: KYTC GPS road centerlines with local segment numbers and road names from the MSAG/LAD

5. Add address fields and temporary work fields to the KYTC road centerlines
6. Apply address ranges to KYTC road centerlines
7. Use a GIS tool developed from the join methodology for timely completion of this task
8. Drop any temporary fields
9. Pass Local Address Model (LAM) to regional integrator

PRODUCT: Local Address Model – KYTC updated road centerlines with local segment ID, road names and address ranges

Work by the Regional Integrator – (ADD)

1. Accumulate local address models for Region
2. Validate/QA/QC LAMs
3. Merge into a regional address model (RAM)
4. Create/validate unique local ID – County Number plus local segment ID

   PRODUCT: Regional Address Model – KYTC updated road centerlines with local Ids and address information in a regional layer
   PRODUCT: KYTC road centerlines with local IDs
   PRODUCT: Database table with unique local IDs, road names and ranges

5. Submit products to state integrator

Work by State Integrator (Agencies Share Responsibilities)

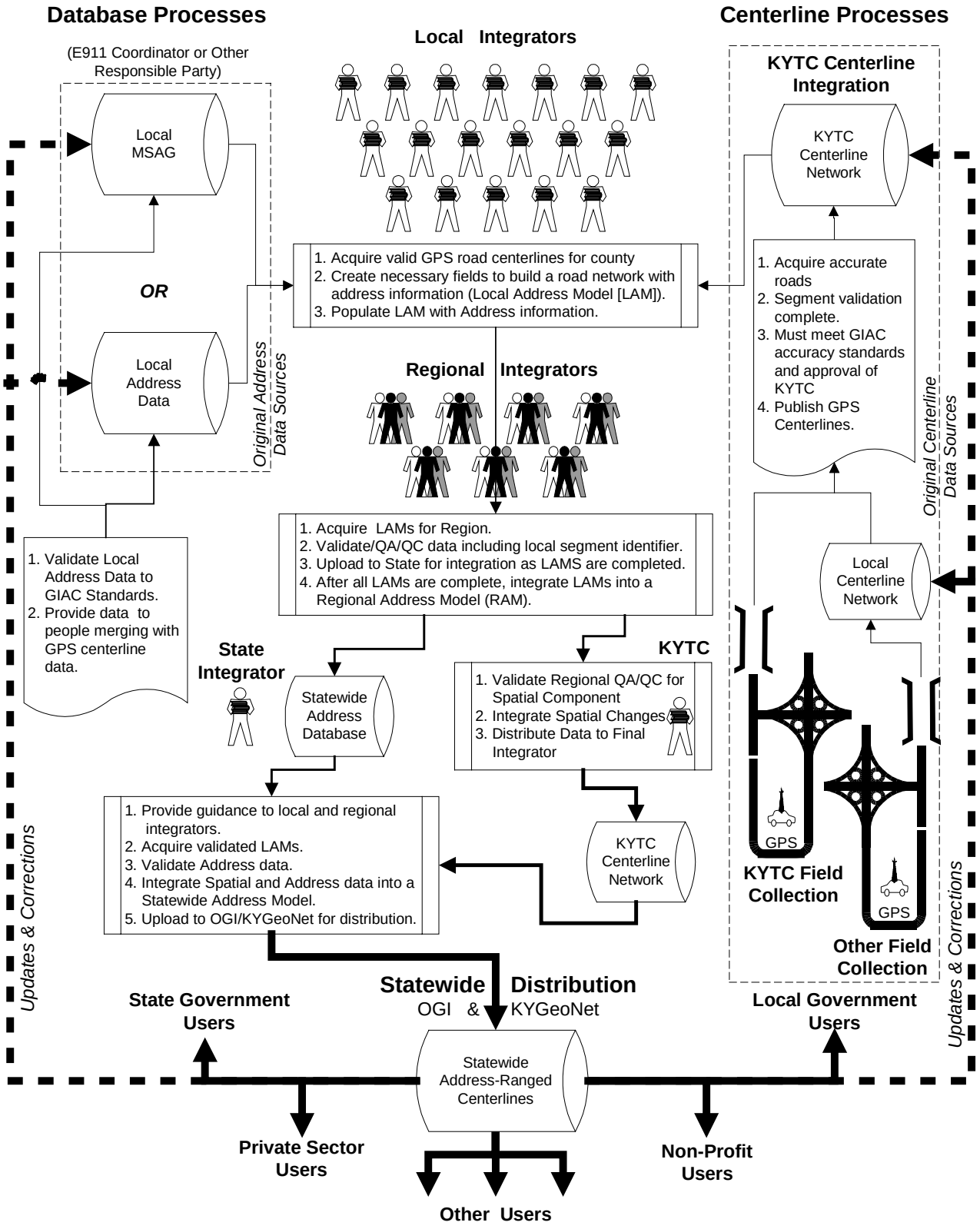
1. House the KYTC road centerlines with local Ids (KYTC)
2. House the database table with local IDs, road names and ranges (KYTC or Other)
3. Merge the address data with the road centerlines to create a layer with address information attached
4. QA/QC Statewide "Intelligent" Road Centerline (Currently Undefined Agency)
5. Provide guidance/feedback to local and regional integrators to improve data processing flow.

   PRODUCT: Statewide Address Model (SAM) created by join between roads and database table

6. Publish Statewide Address Model (via OGI and KYGeoNet) for general use.

For additional discussion of methods and procedures for address-enabled centerline development, please refer to the Kentucky Road Centerline Pilot Project Final Report, submitted by Pennyrile ADD and MapSync Company, April 30, 2002. This can be found on the GIAC website (http://giac.state.ky.us/standards.htm).

Figure 3: Workflow Diagram of Proposed Methods for Integrating Address Information with KYTC Road Centerlines

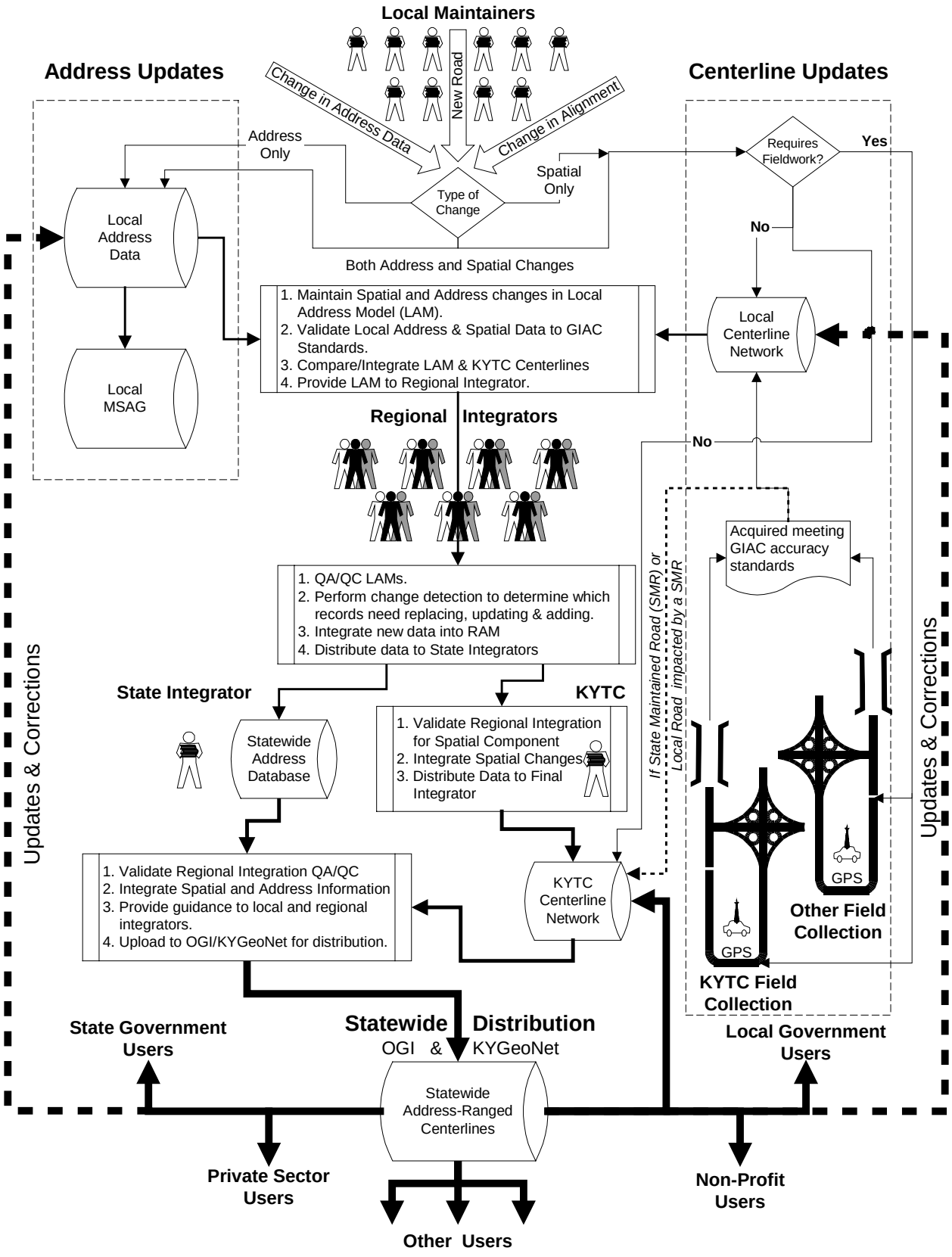


APPENDIX II: Update Strategies for KYTC Road Centerlines and Address Information

The need for a carefully planned update process for maintaining the address-enabled road centerline is imperative. A unified spatial and tabular interface would assure synchronicity between the two parts of the dataset. Some ideas are presented as guides to encourage developers to review options and determine the best fit for their business practices. Development should occur in consultation with the State Integrator(s).

The update strategy follows a similar structure as represented in the integration process diagram in Figure 3. To visualize the maintenance process, please refer to Figure 4 below. Updating process descriptions are broken into their spatial and tabular address components. Maintenance responsibilities could be separated into spatial and address areas if business processes demand it, but it is recommended that unified GIS-based interface be utilized to assure synchronicity of the data.

Figure 4: Workflow Diagram of Separated Road Centerline and Address Information Maintenance



Spatial Update Cycles

To simplify discussion, the roads will be separated into two major divisions for updating: state-maintained and locally-maintained roads. After changes have been recorded at KYTC, the updated GIS files will be accessible at OGI & KYGeoNet within 30 working days.

It is recognized that local agencies may have a need to capture road centerlines prior to when KYTC-Division of Planning can acquire, integrate and distribute a new centerline. Therefore, part of the planned maintenance process during state integration is to synchronize locally collected roads with those captured by KYTC-Planning. It should be emphasized that both KYTC Planning and local agencies must meet or exceed the defined accuracy standard adopted by GIAC in order for integration to properly occur. More discussion between KYTC Planning and the local agency should occur during the implementation phase.

State Maintained Roads

For state maintained roads (including interstates, parkways, US highways, and state routes) where an Official Order is received by the KYTC Division of Planning within 30 days from the time the road is open for traffic, KYTC-Planning will capture the spatial element of new alignments and integrate this into the statewide GIS layer shared for public use.

For state maintained roads (including interstates, parkways, US highways, and state routes) where an Official Order is ***not received*** *by the KYTC Division of Planning from the time the road is open for traffic*, KYTC-Planning will capture the spatial element of new alignments within 30 working days and integrate this into the statewide GIS layer shared for public. However, it will have a “NL” suffix inserted into the LRS-ID to temporarily distinguish it from an existing official alignment designated by law . The "NL" will be dropped upon receipt of the Official Order and this will be represented in the next monthly update of the public road centerline files.

Local Roads

For local roads that are adjacent to or otherwise impacted by a new state maintained road alignment or Official Order, these roads will be updated by KYTC Planning personnel within 30 working days of receipt of the impacting Official Order.

Based on conversations with KYTC Planning personnel, KYTC needs to capture the local roads impacted by changes in state-maintained roads in order collect additional information necessary for KYTC's internal needs. KYTC would then share the spatial information with the appropriate locals within 60 days (as described above).

For all other locally maintained roads, KYTC-Planning is developing update cycles to be determined using an area's growth rate and other criteria to determine how often a county is updated. KYTC Division of Planning will publish the final criteria (and county lists) for the update cycles after they have completed and reviewed the initial statewide GPS road centerline capture.

Local entities may choose to update/maintain their own local centerlines, since the local agency is more likely to know where new subdivisions and other non-state roads are added to the network. They may need them for emergency dispatch and other services prior to KYTC's planned update cycle. It is strongly encouraged that they work with KYTC-Planning to develop a plan to share information and reduce duplication of effort while satisfying both sides needs for an acceptable update cycle and accuracy level.

Tabular Address Update Cycles

The local address database will be maintained at the local level and they will determine how and when it is updated. It would be beneficial for both the addressing and spatial information be directly linked to assure synchronicity for both components of the address-enabled road centerline.

The frequency of updates is dependent on local decisions. One recommendation has been a weekly update cycle at the local level and then this being fed up to the regional integrator on some longer cycle. A county's tabular address information integrated with the spatial network creates the local address model (LAD). These LADs will be knitted together in a county by county approach with the overall update cycle defined by KYTC Division of Planning's update cycle for local roads. The general target is one to three years depending on levels of population growth and other factors. As noted above, a county list will be published to show the planned update cycle. If there is more local involvement and sharing of information with KYTC-Planning then those proactive counties could see a significant shortening of their update cycle within the overall statewide plan.

An Example

Ideal County, after reviewing the GIAC standards and seeing an opportunity to improve the County's information infrastructure, commits to maintaining their own road centerline network with attached address information.

First, they work out an information sharing plan with KYTC-Planning. They agree to capture all changes to local roads that are not impacted by KYTC Official Orders. They agree to accept KYTC-Planning centerline information on state maintained roads and local roads impacted by state-maintained roads (see above discussion). They also agree to pass to KYTC-Planning corresponding LOCAL_Ids to tie the KYTC centerlines to the appropriate address records. KYTC-Planning agrees to pass the locals KYTC's centerline changes within the defined periods (stated in a previous section above).

As new roads are created and/or address information changes occurr (i.e. streets renamed, etc.), the local personnel capture the spatial data they are responsible for and make the corresponding changes to the address data. They pass the appropriate information to KYTC-Planning and in turn receive Planning's updates. As a result when it comes time for the spatial update of the county, the local personnel easily pass the Local Address Model to the Regional Integrator who can quickly perform the QA/QC and pass this on to the State Integrator. As a result, the public gets better information more often about the county and local and state governments spend taxpayer money more effectively to serve the people.